Presentation #1

Title: Use of Multivariate Analysis and Machine Learning Algorithms to Detect Anomalous Transactional Data.

Professor Gopi Upreti

Abstract

Not Available

Biography

Not Available

Presentation #2

Title: Rebuilding Coupled with Sustainable Land Use, Food Security, and Agri-business for Community Resiliency in the Gurkha Earthquake Devastated Region in Nepal.

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Abstract

On April 25, 2015, Nepal was struck by a devastating 7.8 magnitude earthquake (the Gurkha earthquake), followed by a second, 7.3 magnitude earthquake on May 12 and hundreds of aftershocks. This has destroyed thousands of villages, causing 8,790 deaths and 22,300 injuries across the 23 districts of Nepal. This study was conducted to assess geohazards risk, food security, and agri-business following the earthquake devastation in the region. Based on the Landsat images, large number of post-earthquake landslides occurred especially in the high slope and high elevation areas suggesting that such areas pose very high risk for settlement as well as other developmental initiatives. While food security was already a national issue even before the earthquake, the destruction of grain storage facilities, loss of stored grains, loss of agricultural manpower due to deaths and injuries, destruction of irrigation canals and farmlands due to landslides, and interruption of the supply of agricultural inputs, the food security problem has been further intensified in the region. In addition, rural agro-industries such as handcrafts, garments, herbs and medicinal products, dairy and meat products, fruits, and food processing were also devastated. While rebuilding villages, hospitals, schools, roads, and other infrastructures are well established priorities, developing sustainable land uses, ensuring food safety and security using climate smart tools as well as promoting agri-business is equally critical for enhancing community resiliency in the region. Therefore, developmental challenges such as minimizing risks of geohazards, generating employment and income, and increasing future preparedness to natural disasters must be addressed concurrently while rebuilding the region. Since agriculture is the main occupation of earthquake devastated communities, it is quite logical to have a major emphasis on agricultural sector for rural reconstruction and development. Because traditional agriculture has failed to address many challenges such as ensuring food security, increasing farm income, minimizing climate change risks, and raising crop/farm productivity, it is important to have a well thought-out intervention in traditional agriculture so that it can address these challenges while increasing community resiliency for future natural disasters. As agri-business encompasses many facets of agriculture such as commercialized agricultural production, processing/packaging industries, storage, marketing, input supplies, and employment and income generation, using agri-business as a catalyst for agricultural development is quite appropriate. Considering the importance of agri-business in rebuilding Nepal from within, the Nepal Agri-business Information System (NAIS) project has been launched. The NAIS project has begun cataloging information related to earthquake-devastated cottage industries, slope, elevation, settlement, land use types, and

agricultural production (e.g., soil types, geology, irrigation, cropping system, livestock, geohazards, climate, farming communities) in the region. By using GIS, we intend to identify potential small to medium size agro-industries and businesses of rural Nepal that will most efficiently use the resources immediately available. Because agri-business offers tremendous opportunities for increasing food security, raising living standards, and enhancing community resiliency, sufficient attention must be given to agri-business development while rebuilding the region. In order to enhance community resiliency and develop a resilient Nepal, concurrent initiatives for rebuilding and sustainable land use planning, food security, and agri-business development is suggested.

Biography

Dr. Poudel was born on October 10, 1960 (Aswin 24, 2017 B.S.) in Sange, Chudher, Tanahu, Nepal. He spent his childhood in Sange Chudher, Tanahu, and in Jeeta Deurali in Lamjung, both in Mid-Hills of Nepal. Dr. Poudel passed his S.L.C. exam from Nirmal Vocational High School, Damauli, Tanahu in 1977 (2034 B.S.). Dr. Poudel received an I.Sc. in Agriculture at Tribhuvan University at Rampur (IAAS), Chitwan, Nepal in 1980; a B.Sc. in Agriculture (Major: Agricultural Economics) at University of Agriculture, Faisalabad, Pakistan in 1987; an M. Sc. in Natural Resource Development and Management at Asian Institute of Technology, Bangkok, Thailand in 1991; and a Ph.D. in Soil Science, University of Georgia, Athens, GA, U.S.A. in 1998.

Dr. Poudel is an expert in soil physical, chemical, and mineralogical characterization; soil classification; and soil and water conservation. His research and teaching interests include soil erosion control, soil mineralogy, water conservation, water quality monitoring and modeling, climate change adaptation, geohazards, and environmental soil chemistry. Dr. Poudel has assembled more than three dozen publications in peer-reviewed journals and conference proceedings and has received more than $6.8 million in external funding as a PI and more than $2.1 million in external funding as a CO-PI. He is the Founder of the Asta-Ja Framework.

Dr. Poudel's professional experience consists of Research Fellow at Asian Vegetable Research and Development Center, Taiwan (1991-1994); Graduate Research Assistant in Sustainable Agricultural and Natural Resource Management Collaborative Research Support Program, University of Georgia (1994-1998); and Visiting Research Scholar, University of California Davis (1998-2000). Dr. Poudel joined the University of Louisiana at Lafayette, USA, as an Assistant Professor of Soil Science in August 2000, and currently is a Professor and Assistant Director of School of Geosciences, Coordinator of Environmental Science Program, Director of Ag. Auxiliary Units (Model Sustainable Agriculture Complex (600-acre Cade Farm), Crawfish Research Center, and Ira Nelson Horticulture Center), and Regents Professor in Applied Life Sciences at the University of Louisiana at Lafayette.

Dr. Poudel's professional affiliations include membership in Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Geological Society of America, American Geophysical Union, and Soil and Water Conservation Society, USA. Dr. Poudel is the life member of Nepalese Association in Southeast America (NASeA), Asta-Ja Abhiyan Nepal, and Association of Nepalese Agricultural Professionals of Americas (NAPA). Dr. Poudel is the founding member of Asta-Ja Abhiyan Nepal, and the founding President of Asta-Ja Research and Development Center (Asta-Ja RDC), Kathmandu, Nepal.

Dr. Poudel is a Board Member of the Bayou Vermillion Preservation Association (BVPA), Lafayette, Louisiana, USA, Advisor of the NASeA, Resource Person of Louisiana Organics, and a member of the Louisiana Technical Advisory Committee, USDA-NRCS, Louisiana, USA.

Presentation #3

Title: Review of Current Agricultural Research, Teaching, and Extension in Nepal

Regents Professor, Faculty Fellow, and Cotton Entomology Program Leader at Texas A&M University Research Center, Lubbock, Texas.

Abstract

Higher education in agricultural sciences in Nepal formally began in 1972 with the establishment of Tribhuvan University's Institute of Agriculture and Animal Sciences (IAAS) in Rampur, Chitwan. Today, Nepal has three agricultural universities (TU IAAS, Himalayan College of Agriculture Science and Technology (HICAST) in Bhaktapur, and Agriculture and Forestry University (AFU) in Chitwan) and several agricultural colleges and polytechnic institutes throughout the country. While these agricultural institutions focus primarily on training agricultural scientists and specialists, Government of Nepal/Department of Agriculture conducts agricultural outreach through its district agricultural development offices in all 75 districts. The country's agricultural research is shouldered by Nepal Agriculture Research Council (NARC), which coordinates research activities through its five regional headquarters and several research stations throughout the country. The author had an opportunity to spend about five months in Nepal as a Fulbright Senior Fellow for Agriculture. The assignment entailed visiting an extensive number of agricultural academic institutions, government research institutes, private farms, and non-governmental organizations engaged in agricultural development. This presentation highlights the functioning of these institutions as it relates to agricultural manpower development, research, and outreach. Current challenges and future prospects of these agricultural institutions in Nepal's overall agricultural development are discussed.

Biography

Dr. Megha Parajulee earned a B.Sc. (Agriculture) degree (1987) from Himachal Pradesh, India, and M.S. (1991) and Ph.D. (1994) in Entomology from the University of Wisconsin-Madison. Parajulee joined Texas A&M University in 1994 as a postdoctoral research associate and later moved to Texas Agricultural Experiment Station in Vernon and served as a research scientist/cotton entomologist (1996-2000). In 2001, Dr. Parajulee joined his current position at the Texas A&M Lubbock Center as Cotton Entomology Project Leader. He is currently a Professor, Faculty Fellow, and Texas A&M Regents Fellow. His research focuses on developing ecologically intensive arthropod management in Texas cotton.

Dr. Parajulee is a leader in cotton entomology research, teaching, and service, with an exemplary record of scientific research, publication, and delivery of pest management technologies to the producer clientele of Texas and beyond. He has authored/co-authored 92 refereed and over 350 non-refereed publications, organized several international invited symposia, and has presented 150 invited and 250 submitted papers. He is active internationally with plenary/keynote/special speaking role in Egypt, China, India, Colombia, Nepal, Uzbekistan, United Kingdom, USA, Canada, Mexico, South Korea, South Africa, Australia, Germany, Brazil, and Ghana. He received the Texas A&M Vice Chancellor's Award in Research Excellence (2008), Faculty Fellow Award (2009), Regents Fellow Award (2010), and Texas A&M Vice Chancellor's Award in Team Research (2015). He is active in ESA and other professional societies for the last 25 years, including ESA National Program Committee Chair (2010), Chair of the ESA Standing Committee on International Affairs (2008), President of

the Society of Southwestern Entomologists (2009), and International IPM Symposium Program Co-Chair (2012). He was also a Fulbright Senior Fellow in Nepal and Uzbekistan (2014). He is the incoming President (2016-2017) of Entomological Society of America International Branch.

Presentation #4

Title. Observation and Monitoring of the World Using Earth Observation Satellite Data

Dr. Chandra Prasad Giri, Chief of Sensing and Spatial Branch, Office of Research and Development, Environmental Protection Agency (EPA)

Abstract
Not Available

Biography

Dr. Chandra Prasad Giri is Chief of Sensing and Spatial Branch at Office of Research and Development, Environmental Protection Agency (EPA). His broad research interests relate to land cover characterization, mapping and monitoring using remote sensing and GIS.

Before joining EPA, Dr. Giri was a Research Physical Scientist at U. S. Geological Survey/Earth Resources Observation Science Center (EROS). While there, he led two projects: global 30 land cover monitoring and distribution and dynamics of mangrove forests of the world. He served as PI on (i) biodiversity characterization of North America focusing on biogeographical distribution of small-ranged endemic species, (ii) Co-I to study potential effects of climate change on harmful invasive species distributions in the United States, (iii) PI of NASA funded project on the study of mangrove forests distribution and dynamics of the world, and (iv) Co-I in the North American Land Change Monitoring System, and GLOBCOVER projects. Previously, he studied continental and global land cover characterization and mapping using multi-resolution and multi-sensor remotely sensed data.

Before joining EROS, Dr. Giri worked as a Senior Staff Associate at Columbia University's Center for International Earth Science Information Network (CIESIN) where he was responsible for conducting research on land cover assessment and monitoring, global environmental databases, and gridded population of the world. From 1993 until 2000, he worked for the United Nations Environment Programme, Environment Assessment Programme for Asia and the Pacific (UNEP/GRID-Bangkok) and Asian Institute of Technology (AIT). In this capacity he served as a principal investigator and project coordinator in various projects in Asia and the Pacific including land cover assessment and monitoring, strategic environmental framework for Greater Mekong Sub-region, study of environmental degradation in and around refugee camps in eastern Nepal, deforestation monitoring in Myanmar (Burma), forest fire in Southeast Asia, and glacier lake outburst flood monitoring.

From 1998 to 1991, he worked for the Forest Department of His Majesty's Government of Nepal. He holds the Bachelor of Science in Science and also in Forestry from Tribhuvan University, Nepal and Master of Science in Natural Resources and Ph. D. in Remote Sensing and GIS from Asian Institute of Technology, Bangkok, Thailand.